CLAIMS

1. Optical communication line (2) comprising:

- a first optical connection (S1) with accumulated chromatic dispersion at least partially compensated and including:

  - a first optical waveguide portion (F_{1-1}) directly connectable to an output (OU1) of a first processing station (1) of electromagnetic radiation at a pre-established wavelength,

  - a second optical waveguide portion (F_{2-1}) coupled to the first portion,

- an amplifying station (A1) provided with a first input (IN1) directly connected to the second portion in order to receive the radiation and with a first output (OU2) for amplified radiation,

- a second optical connection (S2) with at least partially compensated accumulated dispersion and including:

  - a third optical waveguide portion (F_{2-2}) directly connected to the first output (OU2),

  - a fourth optical waveguide portion (F_{1-2}) coupled to said third portion and directly connectable to a second input (IN2) of a second processing station (A2), said first (F_{1-1}) and third (F_{2-2}) portions being associated to respective first order chromatic

dispersions having opposite signs,

characterized in that at least said first and third portions (F_{1-1},F_{2-2}) are associated to respective first order chromatic dispersions having, at the pre-established wavelength, a corresponding absolute value lower than or equal to 13 ps^2/Km.

2. Communication line (2) according to claim 1, wherein at least said first and third portions (F_{1-1},F_{2-2}) are associated to respective first order chromatic dispersions having, at the pre-established wavelength, a corresponding absolute value lower than 10 ps^2/Km.

3. Communication line (2) according to claim 1, wherein at least said first and third portions (F_{1-1},F_{2-2}) are associated to respective first order chromatic dispersions having, at the pre-established wavelength, an absolute value greater than 0.5 ps^2/Km.

4. Communication line (2) according to claim 3, wherein at least one of said first and third portions (F_{1-1},F_{2-2}) is associated to respective first order chromatic dispersion having, at the pre-establshed wavelength, an absolute value greater than 1 ps^2/Km.

5. Communication line (2) according to claim 1, wherein the first and the second optical connections are substantially formed by waveguide portions having, at the pre-established wavelength, first order chromatic

dispersions in absolute value lower than 13 ps^2/Km.

6. Communication line (2) according to claim 1, where said waveguide portions are substantially formed by optical fibers.

7. Communication line (2) according to claim 1, wherein said first station (1) is such as to send on the first portion (F_{1-1}) radiation having a first power value and said amplifying station (A1) is such as to send on the third portion (F_{2-2}) amplified radiation having a second power value, the first and the third portions being such that the product of a non linearity coefficient associated to the first portion and said first power value is substantially equal to the product of a non linearity coefficient associated to the third portion and said second power value.

8. Communication line (2) according to claim 1, wherein the waveguides of said first portion (F_{1-1}) and said third portion (F_{2-2}) present effective areas of a value greater than or equal to 40 μm^2.

9. Communication line (2) according to claim 8, wherein the waveguides of said first portion (F_{1-1}) and said third portion (F_{2-2}) present effective areas of a value greater than or equal to 50 μm^2.

10. Communication line (2) according to claim 1, wherein said first (S1) and second (S2) optical connections

present a substantially zero accumulated dispersion.

11. Communication line (2) according to claim 1, wherein each of said first (S1) and second (S2) connections is composed of two directly coupled portions of optical fiber having chromatic dispersions of opposite signs.

12. Communication line (2) according to claim 1, wherein said first and second optical connections include single mode optical fibers.

13. Communication line (2) according to claim 1, wherein said first processing station is an information signal transmission station (1) including at least one source of radiaton at a wavelength suitable for propagation in optical fiber.

14. Communication line (2) according to claim 1, wherein said second processing station (3) is an information signal receiving station.

15. Communication line (2) according to claim 13, wherein said transmission station (1) is such as to generate optical pulse signals.

16. Optical line (2) according to claim 1, wherein said first processing station (1) is a radiation amplifying station and said second processing station is a further radiation amplifying station.

17. Optical line (2) according to claim 1, wherein at least said first and said second optical connections have

a length greater than or equal to 40 km.

18. Optical line (2) according to claim 17, wherein said length is greater than or equal to 80 km.

19. Communication line (2) according to claim 1, wherein said first (S1) and second (s2) optical connections present substantially zero accumulated dispersion slope.

20. Method for manufacturing an optical line for a communication system, comprising the following steps:

- providing a first processing station (1) provided with an output for electromagnetic radiation having a pre-established wavelength,

- connecting a first input of an amplifying station (A1) to the first station (1) to receive radiation, the amplifying station being provided with a first output for amplified radiation,

- placing a first optical connection (S1) including at least a first portion of optical waveguide (F_{1-1}) directly connected to said output and a second portion of optical waveguide (F_{2-1}) directly connected to the first input, said first connection having at least partially compensated accumulated chromatic dispersion,

- placing a second optical connection (S2) having at least partially compensated accumulated chromatic dispersion and including a third portion of optical waveguide (F_{2-2}) directly connected to the first output

and a fourth portion of optical waveguide (F_{1-2}) directly connectable to a second processing station (A2),

- choosing said first (F_{1-1}) and third portions (F_{2-2}) in such a way that they are associated to respective first order chromatic dispersions of opposite signs and an absolute value, calculated at the pre-established wavelength, lower than or equal to 13 ps^2/Km.

21. Method for limiting the non linear effects in an optical communication system, comprising the following steps:

- supplying a first optical connection (S1) including at least a first portion of optical waveguide (F_{1-1}) coupled to a second portion of optical waveguide (F_{2-1}), said first connection having at least partially compensated accumulated chromatic dispersion,

- introducing electromagnetic radiation having a first wavelength in said first portion of optical waveguide (F_{1-1}),

- amplifying the radiation leaving said second portion,

- propagating said amplified radiation in a second optical connection (S2) having at least partially compensated accumulated chromatic dispersion and including a third portion of optical waveguide (F_{2-2}) coupled to a fourth portion of optical waveguide (F_{1-2}), said first (F_{1-1}) and third portions (F_{2-2}) being

associated to respective first order chromatic dispersions of opposite signs and a respective absolute value, calculated at the pre-established wavelength, lower than or equal to 13 ps^2/Km.

22. Communication system (100) comprising:

- a first procesing station (1) provided with an output (OU1) for electromagnetic radiation having a pre-established wavelength,

- an amplifying station (A1) provided with a first input (IN1) connected to the first station (1) to receive the radiation and with a first output (OU2) for amplified radiation,

- a first optical connection (S1) having at least partially compensated accumulated chromatic dispersion and including at least a first portion of optical waveguide (F_{1-1}) directly connected to said output and a second portion of optical waveguide (F_{2-1}) directly connected to the first input,

- a second optical connection (S2) having at least partially compensated accumulated chromatic dispersion and including at least a third portion of optical waveguide (F_{2-2}) directly connected to the first output and a fourth portion of optical waveguide (F_{1-2}) directly connectable to a second processing station (A2), said first (F_{1-1}) and third portions (F_{2-2}) being associated to

respective first order chromatic dispersions of opposite signs,

characterized in that at least said first and third portions of fiber (F_{1-1},F_{2-2}) are associated to respective first order chromatic dispersions with an absolute value, at the pre-established wavelength, lower than or equal to 13 ps^2/Km respectively.